STAN-EVAL NOTES
CIVIL AIR PATROL VIRGINIA WING
UNITED STATES AIR FORCE AUXILIARY
7401 Airfield Drive
Richmond, Virginia 23237-2250
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Pilot Workshop 25 June 2011: VAWG is hosting an instructor pilot workshop on Saturday 25 June 2011 at VAWG HQ. This will be an unfunded event. Although preference will be given to current VAWG Instructor Pilots, this workshop is open to any VAWG pilot who wants to increase their understanding of flying in CAP. Rain or shine, the workshop will begin at 0900 through 1600 and include the following interactive topics:

- How CAP flying is different and why that is important
- Doing the paperwork and why that's important
- Flying the CAP way
- Weather
- CRM and ORM for CAP aircrews
- IFR issues and best practices
- Best practices for the oral and flight portion of a Form 5

If you plan to attend, send an email to steve.hertz@ngc.com to reserve a place. We have room for about 30 individuals.

G1000 Emergency Procedures Gotcha Go Back: In the May newsletter, an item in the POH for our G1000 a/c was referred to. "All G1000 pilots should understand a not so obvious implication of shutting down Bus 2. If this becomes necessary, it is critical that radio one be selected for transmit before shutting down Bus 2. If this is not done, you will not be able to change frequencies on the COM or NAV radios." Turns out the POH is in error. This doesn't really happen. If you shut down Bus 2 with radio 2 selected, radio 2 no longer works but you can select radio 1 and change frequencies. Thanks to Col Vasquez for pointing this out.

Aspen Note: Many pilots who check out on the Aspen have noted that on the ground the Aspen will shut down in a few seconds when power is cut rather than switching over to emergency battery backup. However, the Aspen is actually pretty smart about this. If airspeed is less than 30 knots, the Aspen will shut down in about 6 seconds unless you hit any key to initiate a switchover to battery power. However, in the air at normal cruise speeds, the Aspen will switch to battery power without any pilot intervention when normal power is interrupted.

Back to Basics – Landings and Takeoffs: Landings and takeoffs are considered critical phases of flight and offer the pilot lots of opportunities for bent metal, or worse still, injury or death. Every takeoff and landing is different but a good pilot will reduce the variations in these phases of flight as much as possible so that they are predictable, routine and safe.

Takeoffs and landings are planned events. It's difficult to have a flight that doesn't involve at least one of each. Prior to takeoffs and landings, the pilot should know the runway requirements (distances, surface conditions, and so forth) and related items such as climb rates, descent rates, and weather (visibility and winds). There can always be surprises such as wildlife encroaching on the runway or other situations, but make sure the basics are planned for.

Prior to takeoff, the pilot needs to consider what actions will be taken if an emergency occurs. Emergencies include loss of power and loss of directional control.

Takeoff techniques vary by aircraft and type of takeoff (soft field, short field, normal) but the basics are the same. Power should be applied smoothly, controls positioned for the winds, and the aircraft kept on the centerline. As the aircraft accelerates the pilot can use a rule of thumb that says that the aircraft airspeed should be at 75% of its takeoff speed by at least halfway down the runway. The pilot should abort any takeoff

that has any anomalies or if something doesn't "feel right". It's a lot easier to troubleshoot on the ground than in the air. Once the aircraft reaches Vr, climb at the appropriate airspeed (usually Vy) until a safe altitude has been reached)..

Common takeoff errors include:

- Lack of a plan in case of loss of power or loss of directional control
- Not configuring the a/c properly for takeoff (flaps, cowl flaps, and so forth)
- Allowing the a/c to drift off the centerline
- Improper positioning of the controls for the winds (or worse, the pilot is oblivious to the wind conditions!)
- Riding the brakes on takeoff
- Not rotating at an appropriate airspeed
- Not maintaining an appropriate climb attitude and airspeed after rotation (this is especially important at night or in instrument conditions)

For landing, the old adage applies: good landings start with a good approach. A good approach will put you on final in a position from which a normal landing can be made. Once on final, stabilize the a/c on the extended centerline of the runway by either using a wing low technique or crabbing till just before touchdown. Airspeed control is the most critical parameter for landing. The POH will designate airspeed on final – fly this or a value adjusted for your actual weight. In gusty and windy conditions you may need to fly slightly faster for a/c control. You may also want to land with less flaps or even no flaps in gusty conditions but check your POH. Flying the "spot" method will assure you touchdown at the intended point on the runway. Reference to a VASI or electronic glide slope can also be used unless you want to land on the numbers. The a/c is flown down to just a few feet above the runway at the appropriate airspeed. A flare is then initiated, power reduced, and the aircraft held a few feet off the runway until touchdown. It is important that the aircraft not be allowed to drift off centerline while touching down and that the wheels be aligned with the direction of travel. Drifting on touchdown causes excessive side loads on landing gear that aren't capable of much sideward pressure. You risk damage to the tires and mechanical damage to the gear. Hold enough crosswind correction to eliminate any sideward drift and make sure the wheels are aligned with the direction of motion. The main gear must touchdown first – nose gear landings are asking for trouble. Although many aircraft (especially heavier twins) are landed somewhat flat (again, all aircraft land main gear first – even the A380), our Cessna fleet is much happier with a pronounced nose up attitude on landing. Landing on the nose gear can cause porpoising or worse still, nose gear collapse. But don't overdo it as excessive nose up attitudes can result in a tail strike. Once the aircraft touches down, the a/c must be flown to a complete stop. Even when the aircraft is rolling on all gear, aerodynamic forces are still acting on the aircraft and must be controlled until the aircraft is stopped (or the wind quits blowing). Gentle braking should be used once all the wheels are on the ground. A good pilot flies the airplane until it's tied down and chocked. Finally, be ready to go around if things don't look right. Even the best of pilots can be bested by unexpected wind gusts, unexpected runway guests, and so forth.

Common landing errors include:

- Sloppy approaches
- Poor airspeed control
- Poor crosswind correction
- Poorly executed flares resulting in ballooning, hard touchdowns and nose wheel first landings
- Not keeping the a/c on centerline
- Excessive braking resulting in tire bald spots
- Not flying the a/c until it's tied down
- Not initiating a go around when appropriate

Landing Tip from the FAA: Boing! A Landing Safety Tip Notice Number: NOTC2677
When the airplane contacts the ground with a sharp impact it tends to bounce back into the air. The airplane does not bounce like a rubber ball. Instead, it rebounds into the air because the wing's angle of attack was abruptly increased, producing a sudden addition of lift. The corrective action for a bounce is the same as for ballooning and similarly depends on its severity. When it is slight and there is no extreme change in the airplane's pitch attitude, a follow-up landing may be executed by applying power to cushion the next touchdown, and smoothly adjusting the pitch to the correct landing attitude. When a bounce is severe, the safest procedure is to EXECUTE A GO-AROUND IMMEDIATELY.

Summer Flying: The weather has warmed up and with it we need to reacquaint ourselves with summer flying safety issues. Warm weather means we need to worry density altitude. In practical terms, warmer air means thinner air which means reduced aircraft performance. How much worse? Check your POH for takeoff distances, landing distances, and climb performance. Many pilots do a good job of figuring out takeoff and landing distances but ignore climb performance. Be sure to check all three. Warm weather also brings thunderstorms. Thunderstorm flying is easy – don't do it! Review the weather before any flight to ensure that there are none on your route of flight. Lifted index charts and other weather maps are there to help you determine the probability of encountering thunderstorms. If you are fortunate to have on board weather either with the G1000, the Aspen, or your own handheld, keep an eye out for weather. If you are flying and see building cumulus, beware. If you see lightning, change course or better yet, land. The rule of thumb for any thunderstorm is to keep at least a 20 mile distance from them. Another item to worry is your night currency. Because the days are long it becomes easy to let our night currency lapse. Mission pilots in particular need to remain night current.

Airport Surface Deviation Safety Tip from the FAA: Recently there was an incident where one aircraft (Aircraft A) was given taxi clearance from the ramp to the hold short line of the departure runway. Another aircraft (Aircraft B) was given taxi instructions from the runway to the ramp with instructions to hold short of the intersecting taxi way and give way to the first aircraft. Both pilots read back their instructions correctly. As Aircraft A taxied out, and since he was already cleared to taxi to the hold line of his departure runway, the pilot started to program his electronic flight equipment and therefore had his head down as he taxied. Aircraft B failed to hold short at its designated area and taxied into the path of Aircraft A. The pilot of Aircraft A looked up and saw he was about to collide with Aircraft B and managed to stop just short of making contact.

The moral of this scenario is: No matter what your taxi clearance is, it is imperative that all taxi operations be treated as the VFR See and Avoid operation that it is. Always keep your eyes outside the cockpit and remember that any preprogramming of the flight navigational and communication equipment must be done at the ramp or the run up area and never while the aircraft is in motion.

Always remember that taxi operations, even when you are going to be IFR or if the ramp is in a bad visibility condition, are always a VFR operation. Keep your head up, and your mind and eyes outside the cockpit. This is the only way to ensure that your aircraft does not become an aluminum shredder.

There are excellent resources available at http://www.faa.gov/airports/runway_safety/ about safely operating an aircraft on an airport. Check it out!

Articles for the VAWG Stan Eval Newsletter: We are always looking for brief articles of interest to VAWG pilots to include in this newsletter. CAP has many very experienced pilots who have useful techniques, experiences, and tips to share. Please send your contribution to steve.hertz@ngc.com.